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# FLOODPLAIN MANAGEMENT RECONNAISSANCE STUDY REPORT

## NORTH UTICA LASALLE COUNTY





VILLAGE OF NORTH UTICA

LASALLE COUNTY, ILLINOIS

FLOODPLAIN MANAGEMENT

RECONNAISSANCE STUDY

Prepared by

US DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Champaign, Illinois

In cooperation with

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DEPARTMENT OF TRANSPORTATION

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	PAGE
INTRODUCTION	1
STUDY AREA DESCRIPTION	2
NATURAL VALUES	4
FLOOD PROBLEMS	5
PROBLEM SUMMARY	7
EXISTING FLOODPLAIN MANAGEMENT	8
RECOMMENDATIONS	9
INVESTIGATION AND ANALYSIS	12
VICINITY MAP	
FLOODPLAIN MAP	



VILLAGE OF NORTH UTICA

RECONNAISSANCE STUDY

INTRODUCTION

Use of floodprone areas can be a severe problem in Illinois. Urbanization and floodplain encroachment are increasing the severity of this problem. Over 800 communities in Illinois have been identified as having flood problems.

The Illinois Division of Water Resources (DWR) is the responsible state agency for urban flood control and for setting priorities of flood studies within urban areas. The Soil Conservation Service is providing assistance to the Division of Water Resources in setting these priorities. A joint coordination agreement was executed between the Division of Water Resources, State of Illinois, and the USDA, Soil Conservation Service on April 30, 1976 and revised in December 1978 to furnish technical assistance in carrying out Flood Hazard Studies. These studies are carried out in accordance with Federal Level Recommendation 3 of "A Unified National Program for Floodplain Management", and under Section 6 of Public Law 83-566. A plan of study was executed in October 1985 for reconnaissance studies for 10 Illinois communities. These reconnaissance studies will utilize existing floodplain information, historical high water profiles, and the 100 year floodplain from flood insurance studies when available. Average annual damages are estimated for the structures within the floodplain.

The study was conducted and the report provided to: 1) evaluate needs for additional future studies, 2) estimate average annual damages, 3) provide an updated estimate of the 100 year floodplain map, and 4) provide guidance and recommendations to the community for improved floodplain management.



## STUDY AREA DESCRIPTION

The Village of North Utica is located in LaSalle County, approximately 9 miles west of Ottawa. The population of North Utica is 1067, according to the 1980 census.

Transportation facilities within the North Utica area consist of Interstate Route #80, United States Route #6, Illinois State Route #178, the Chicago, Rock Island and Pacific Railroad, and the Illinois River, which has major barge transportation throughout its length. Other state and county roads are located within a short distance of North Utica.

The main floodwater problems to the Village of North Utica are caused by Clark Run, an Illinois River tributary which has a drainage area of 9.5 square miles, the Illinois-Michigan Canal, and the Illinois River. Gauge station #05553700, at Starved Rock shows the Illinois River drainage area as 11,056 square miles near North Utica. The I&M Canal drainage area is unknown because of the way it was constructed with ditches and creeks flowing under the canal at many locations. The drainage is in the Mississippi River Basin, hydrologic unit #07130001-020.

When the I&M Canal was originally constructed, Clark Run was changed to flow under the canal. At present, the canal has been blocked off, and Clark Run now flows directly through the area, as it probably originally flowed.

The community is located in an area that is mainly agricultural. The cropland is nearly level to gently rolling, but areas along the Illinois River and the lower portion of Clark Run are steep. These areas have several acres of woodland and grassland located along the drainageways. Clark Run is narrow and winding especially from the I&M Canal to Interstate Route #80 about 2 miles north of the village and has not been cleaned of trees and debris for quite some time.



Due to the intense cropping systems, runoff water from the moderate to flat cropland is fairly rapid. There are ponding areas within the watershed due to the extremely flat landscape near Interstate Route #80. Fall tillage and excessive spring tillage is still being done at a rate that is leaving the soil in a highly erodible state.

Annual precipitation for the area is normally 33 inches. Average snowfall is 25 - 27 inches. More than half of the annual precipitation normally falls during the growing season from May to September. The average growing season is 175 days in LaSalle County.

The soils in the community are Millington loam; Millsdale and Drummer silty clay loams; Channahon, Camden, Gale and Fox silt loams; along with exposed sandstone and limestone rocklands. Camden and Fox have moderate limitations for septic systems and slight limitations for urban areas, including streets and home sites. All other soils have severe limitations for both urban areas and septic systems, because of shallow bedrock, excessive slopes or excessive wetness.

The soils in the remaining watershed of Clark Run are numerous and different. The main soils are Drummer, Harpster, Streator, and Peotone silty clay loams. The silt loams are Elburn, Flanagan, Plano, Catlin, Thorp, Chatsworth, Camden, Birkbeck, Virgil, Rutland, and Muscatine. Most of these soils are very productive and are prime farmland soils. Limestone, sandstone and sandy soils are to the east and south of the community with numerous areas already mined.



## NATURAL VALUES

The Village of North Utica is located in an agricultural area that is characterized by mainly corn and soybean crop rotations. Several areas of timber and woodland are located near North Utica. Some grassland and legumes are present in the area. Large areas of mined land also exist. These areas and the Illinois River help provide a large amount of varying quality habitat as well as important travel routes for wildlife. The wide variety of plant and animal species present generally make the area a pleasant place for people to live, work and play.



## FLOOD PROBLEMS

Flooding of the Illinois River can and does happen at any time of the year because of its very large drainage area. However, most of the flooding problems occur in the early spring, due to a combination of snow melt and heavy spring rains on saturated ground. The larger flooding events can last for days and can cause flood and sewer damages to North Utica in addition to slowing normal river transportation and drainage into the river from its many tributaries.

The Illinois-Michigan Canal has had very little maintenance for several years. The canal, through the community, does not have any trees growing in the channel. It also appears to have no outlet as it is a stagnant shallow water holding basin that is a breeding ground for mosquitoes. Several homes have this canal adjacent to their back yards and some are less than 50 feet from the edge of the existing water.

Clark Run has a relatively small drainage area but intense rainfalls from the flat to moderately rolling cropland causes rapid runoff which the existing culverts cannot handle. The culvert under Mill Street near Grove Street is not able to handle the larger runoffs and water from the ditch overflows into the adjacent area at this point. This water causes problems for several residents and businesses.

Because of the small watershed size, the problems are generally the result of local, heavy rainfalls and could occur during any part of the year. Flooding associated with Clark Run is usually of short duration.



Basement water damage is a common problem for the residents of North Utica. This is caused by slow drainage, high water tables, shallow flooding, and seepage or any combination of these events. In addition to basement problems, shallow flooding over a large portion of North Utica has caused many other problems. Flooded streets, lawns and septic systems that do not work or "back up" are additional concerns that must be addressed. Businesses on Main Street, north of the I&M Canal have had water on their first floors. Most of them also have sewer back up problems.

A large portion of the community, including almost all of the trailers located along Grove and Church Streets, south of Clark Run, are served by individual septic systems. Because of existing soil conditions, these systems have severe limitations and do not function properly. The community has an old sewage treatment plant located in the Illinois River floodplain that at present is very inefficient. Plans for the construction of a new sewage treatment plant in 1987 will reduce some of the existing treatment problems.

The village storm sewer system cannot handle the larger runoffs during the intense and heavy rainfall periods. The present system is small and old, but will be updated when funds become available.

The village has no flooding problems with its water supply as the wells are located above the 100 year frequency storm floodplain.



## PROBLEM SUMMARY

Estimated average annual damages from floodwaters to the problems listed are as follows:

Number of Homes/Trailers	Number of Garages/Sheds	Number of Businesses	Total Value	Average Annual Damages
145	96	34	\$7,029,000	\$97,500

Additional damages due to flooding and water related problems:

Approximately 25 wet basements	1300
Yard Damages	5000
Street maintenance & clean up	5000
Maintenance for septic systems	8000
Outside A/C units (6)	<u>200</u>
Total additional expense	\$19500

Total estimated average annual damages for the Village of North Utica equals \$117,000. Damages start at the 5 year frequency storm.

Average annual damages from the Illinois River flooding (22 homes, 14 garages, 4 businesses) is \$17,000 with damages starting at the 10 year frequency storm. Average annual damages for Clark Creek and the I&M Canal are \$100,000 with damages starting at the 5 year frequency storm for the trailers near Grove and Church Streets. Flood waters leave Clark Run near Mill Street and flow southerly towards the I&M Canal at approximately the 5 year frequency storm.



## EXISTING FLOODPLAIN MANAGEMENT

The Village of North Utica has participated in the regular phase of the National Flood Insurance Program since December 18, 1984. Business and homeowners may purchase flood insurance. The city does require building permits and zoning ordinances are in effect.



## RECOMMENDATIONS

It is recommended that the Village of North Utica continue to participate in the National Flood Insurance Program. The village should continue to regulate construction in the floodplain.

Because of existing soil conditions, the village should regulate or restrict construction of excavated crawl spaces and one-half or full basements to alleviate and/or prevent potential water related problems. Waste water from sump pumps should not be outletted into low areas or the existing storm sewers.

It is recommended that the village contact the State Department of Conservation (DOC) and discuss the problems of the I&M Canal. The DOC is the responsible agency for this canal. A proper outlet for the canal would probably help ease the flooding problems for North Utica, as well as alleviate the foul smelling stagnant water that usually remains trapped in the canal. If and when the proper outlet is formed, a maintenance program should be a part of the overall plans for the canal.

A maintenance program should also be implemented for Clark Run. That program should include inspections and clearing and snagging of trees and debris that impedes the flow of the channel. This is especially true of the area from the county road on the north end of the community to an area past the trailer courts, where there are trees and underbrush in and along the existing channel. Properly sized bridge openings would help keep the runoff water contained in the existing channel.

Existing septic systems must be kept in proper working condition to avoid possible health hazards. Since the seasonal groundwater table is very high in the spring of the year, these systems will require more care at this time.



Any new systems constructed should have an adequate filter field attached to the septic system. Correct procedures for installing this type of system may be obtained from the Soil and Water Conservation District office and the County Health Department.

When the new sanitary treatment plant is constructed, it will help alleviate the waste water problem from basements as well as the existing septic tank problems. It is also recommended that when the new treatment plant is constructed, all homes, businesses and mobile homes are "hooked up" to the treatment facilities. New lines should be installed as soon as feasible to correct a potentially hazardous condition that has been in the community for many years.

Because of existing poor basement drainage systems, "backwater check valves" should be installed to any homes or businesses that suffer from sewer backups. Information on these devices may be obtained from the Illinois Department of Transportation, Division of Water Resources booklet, "Protect Your Home From Flood Damage". This booklet can be obtained upon request from the Illinois Division of Water Resources, 310 South Michigan Avenue, Suite 1606, Chicago, Illinois 60604.

The village has discussed the possibility of a drain (48") from Grove Street to the I&M Canal to alleviate problems stemming from water that comes out of Clark Run because of the existing undersized culverts. This would depend on any plans that the Illinois Department of Conservation may have for the I&M Canal. Any type of plan or action should be thoroughly discussed and approved by DOC before any work is started. By coordinating all planning efforts with the DOC, a potential solution may be found that will serve the best interests of the DOC, and the community of North Utica.



The community should consider the possibility of constructing a levee and also pumping water into the existing limestone quarry for protection from the Illinois River floodwaters. This area is located in the southern portion of the community. Plans of this type would have to be discussed and approved by the Illinois Division of Water Resources before permits and construction could start.

The new sewage treatment plant will be constructed in an area that has shallow bedrock. It also has limitations because of high water tables or ponding and flooding hazards. Extreme care must be used during construction to avoid possible problems, as the plant must also be constructed above the 100 year floodplain of the Illinois River.

It is recommended that the Village of North Utica pursue a Comprehensive Flood Hazard Mitigation Plan for the area in cooperation with the Division of Water Resources and FEMA. The community should encourage the relocation or floodproofing of existing floodplain properties. Relocation of existing floodplain properties is intended to reposition buildings on flood-free areas. Floodproofing consists of work on individual buildings such as blocking off low-level entrances and windows, installing protective walls and elevating the building or contents to above the base flood (100-year flood) elevation to minimize flood losses. Habitable buildings should be relocated onto flood free land or be elevated above the base flood.

The state should assign a medium priority for future detailed floodplain management studies in North Utica.



## INVESTIGATION AND ANALYSIS

Limited calculations of channel, culverts and peak discharges, were made as a part of this study. The inventory of flooding and water problems is based on a field review and interviews with local citizens. The 1979 Flood Insurance Rate Map for North Utica, along with interviews with local citizens were used to determine the 100-year floodplain. Aerial photographs were provided by DWR. Damages were based on property value estimates during the field review, and the application of damage factors. These factors came from previous detailed floodplain management studies.

RGS:ENG8:25





VICINITY MAP  
NORTH UTICA  
LASALLE CO., IL.

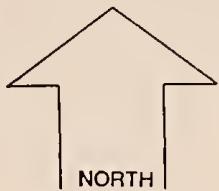


LEGEND

— — — — — CORPORATE LIMITS

██████████ 100 YEAR FLOODPLAIN

~~~~~ SURFACE WATER



NORTH

400' 0' 400'

APPROXIMATE SCALE

LIMIT OF STUDY

CLARKSON CREEK

— — — — — COUNTY ROAD

CHICAGO - ROCK ISLAND AND PACIFIC RAILROAD

(ABANDONED)

LINCOLN

MILL

ST.

GRATE

ST.

CHURCH

ST.

WATER

ST.

CLARK

ST.

GRiffin

ST.

WATER

ST.

WASHINGON

ST.

JOHNSON

ST.

WATER

ST.

